



Forest Insect & Disease Management

Survey Report

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DWARF MISTLETOE OF BLACK SPRUCE AND BROOM RUST OF BALSAM FIR ON THE NICOLET NATIONAL FOREST

By

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During April 1976, the St. Paul Field Office conducted a survey on the Nicolet National Forest in Wisconsin to determine the distribution and incidence of dwarf mistletoe and broom rust on black spruce and broom rust on balsam fir. The survey was done by selecting a six mile grid transect over the complete forest. All black spruce and balsam fir stands encountered during the survey were located on a map and recorded as disease free or infected with mistletoe and/or broom rust.

Dwarf Mistletoe (Black Spruce)

Of the 76 black spruce stands examined, 24% were found infected by Arceuthobium pusillum (Figure 1). Seventeen percent of the infected stands were classified as light to moderate with little or no mortality. Five percent were classified as heavy with substantial mortality. However, most of the mistletoe was found in poor quality black spruce stands. This survey represents approximately 25% of the 2,000 acres of black spruce on the forest.

Broom Rust (Black Spruce and Balsam Fir)

Broom rust (caused by Chrysomyxa arctostaphyli) was not found in the black spruce stands. Twenty three percent of the 104 balsam fir (caused by Melampsorena caryophyllacearum) stands examined were found infected with broom rust. The rust was distributed at random throughout the area.

The broom rusts are of no economical importance since they rarely cause tree death. The incidence of dwarf mistletoe on black spruce is high. Control measures in the black spruce management guide (rough draft of controls available from S&PF) should be considered when the cost benefit ratio is positive. Control measures in low value stands may be considered to prevent the spread to high value stands.

NICOLET NATIONAL FOREST

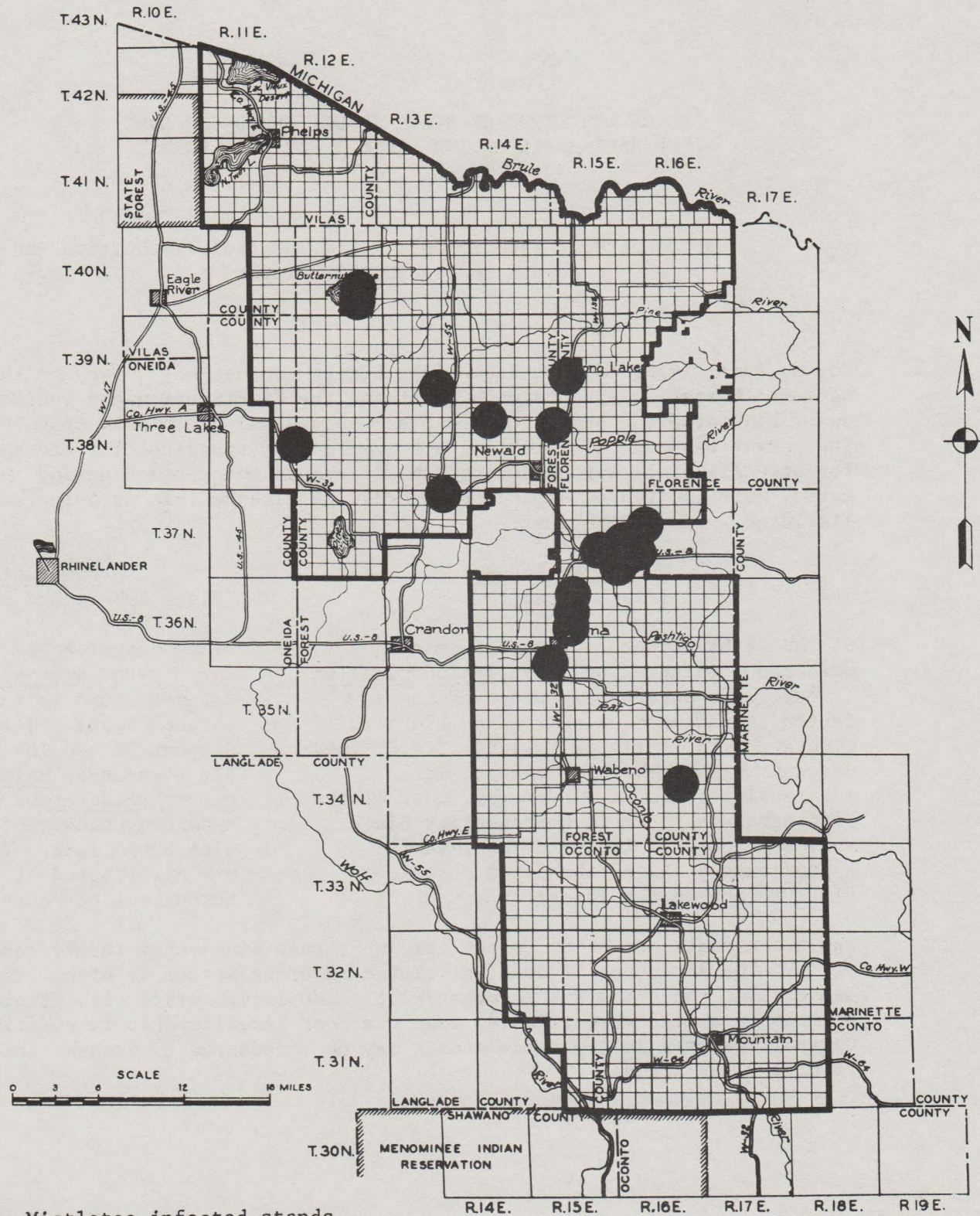


Figure 1. Distribution of Dwarf Mistletoe on Black Spruce on the Nicolet National Forest.